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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,406	04/14/2006	Sei-ichi Tanuma	234600	9674
23460 7590 04/17/2009 LEYDIG VOIT & MAYER, LTD TWO PRUDENTIAL PLAZA, SUITE 4900 180 NORTH STETSON AVENUE CHICAGO, IL 60601-6731				
EXAMINER				
BRUSCA, JOHN S				
ART UNIT		PAPER NUMBER		
1631				
MAIL DATE		DELIVERY MODE		
04/17/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/526,406

Applicant(s)

TANUMA ET AL.

Examiner

John S. Brusca

Art Unit

1631

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 28, 30, 32, 34, 38, 40-44, 46 and 47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 28, 30, 32, 34, 38, 40-44, 46 and 47 is/are rejected.
- 7) ☒ Claim(s) 28, 30, 32, 34, 35, 40, 41, 46 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-848)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office action contains new grounds of rejection under 35 U.S.C. 112 2nd paragraph that are not necessitated by the applicant's amendment, and therefore this Office action is a nonfinal action.

Status of the Claims

2. Claims 28, 30, 32, 34-38, 40-44, 46, and 47 are pending.

Claims 28, 30, 32, 34-38, 40-44, 46, and 476 are rejected.

Claims 28, 30, 32, 34, 35, 40, 41, 46 are objected to.

Specification

3. The objection to the specification in the Office action mailed 12 December 2008 is withdrawn in view of the argument presented by the applicants that the peptide in figure 20 is a branched polypeptide that is not required to have a SEQ ID NO.

Claim Objections

4. Claims 28, 30, 32, 34, 35, 40, 41, 46 objected to because of the following informalities:

Claims 28, 30, 32, 34, 35, 40, 41, and 46 are objected to for lack of an article preceding "target protein" in claim 28, section (i3), claim 30, sections II and III, claim 32, line 34, claim 34, section (i3), claim 35, line 3, claim 35, section (a2), claim 40, section (ii) and section (III), claim 41, sections (a1) and (a2), and claim 46, line 34.

Claims 35, 41, and 46 are objected to for lack of an article preceding "target amino acid sequence" in section (c1), claim 41, section (c1), claim 46, lines 18-19.

Claim 35 is objected to for an inappropriate colon after “target” in section (d1).

Claim 41 is objected to for lack of the article “the” before the term “following” in line 2.

Claims 35 and 41 are objected to for lack of an article preceding “target amino acid sequence” in claim 35, section (c1), and claim 41, section (c1).

Claim 46 is objected to for lack of the article “the” before the term “following” in lines 4 and 9.

Claim 32 is objected to for recitation of the terms “step (ii)” and “step (iii)” in lines 39 and 41, respectively because the referred to claim elements in lines 36 and 38 are means instead of steps.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

5. The rejection of claims 28-30 and 41-44 under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter because the claimed subject matter is a program per se is withdrawn in view of the amendment to the claims filed 12 March 2009.
6. The rejection of claims 28, 34-38, and 41-45 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter due to lack of a tangible result is withdrawn in view of In re Bilski and reconsideration of the claimed subject matter, which is considered to have a practical application for protein ligand design.
7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 28, 30, and 41-44 are drawn to a computer program on computer readable media. A review of the specification does not show a definition of computer readable media such that excludes an embodiment that is information in a signal. On page 70 of the specification the computer readable recording medium of claim 45 is described as follows:

Here, a "computer-readable recording medium" refers to an optionally chosen recording medium capable of recording electronic data, and readable by a computer as necessary, and is exemplified by portable information recording media such as magnetic tapes, magnetic discs, magnetic drums, IC cards, and 30 optical discs (e.g., CD, DVD).

The description of computer readable recording medium does not exclude a medium that is a signal because data can be stored temporarily in a signal for subsequent input to a computer receiving the signal. As such an embodiment of the claims read on non-statutory subject matter (In re Nuijten 84 USPQ2d 1495 (2007)). The applicants may overcome the rejection by amendment of the claims to be limited to physical forms of computer readable media described in the specification, or if no description exists for physical computer readable media, by presenting a statement that the claims do not read on embodiments that are not physical computer readable media that are conventional in the art.

9. Claims 34-38 and 40 are rejected under 35 U.S.C. 101 because these claims are drawn to non-statutory subject matter.

Claims 34-38 and 40 are drawn to a process. A process is statutory subject matter under 35 U.S.C. 101 if: (1) it is tied to a particular machine or apparatus or (2) it transforms an article to a different state or thing (In re Bilski, 88 USPQ2d 1385 Fed. Cir. 2008).

The claimed subject matter is not limited to a particular apparatus or machine. To qualify as a statutory process, the claims should require use of a machine within the steps of the claimed subject matter or require transformation of an article to a different state or thing. Insignificant extra-solution activity in the claimed subject matter will not be considered sufficient to convert a process that otherwise recites only mental steps into statutory subject matter. Preamble limitations that require the claimed process to comprise machine implemented steps will not be considered sufficient to convert a process that otherwise recites only mental steps into statutory subject matter. The applicants are cautioned against introduction of new matter in an amendment.

10. Applicant's arguments filed 12 March 2009 have been fully considered but they are not persuasive. The applicants have not amended claims 28, 30, and 41-44 to exclude a signal, nor have the applicants presented statements that the claimed subject matter does not include embodiments that are signals. Claims 34-38 and 40 have been amended in the preamble to recite "comprising allowing a computer to recite", however the steps of the claims do not require use of a machine or a transformation of an article to a different state or thing. Because the steps of the claimed subject matter include mental steps, the rejection is maintained.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 28, 30, 32, 34-38, 40-44, 46, and 47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are indefinite for recitation of the phrase "calculating an intermolecular energy parameter" in claim 28 section (b3), claim 32, and claim 34 section (b3) because it is not clear what molecules are used to calculate the intermolecular energy parameter.

The claims are indefinite for recitation of the phrase "a score matrix based on amino acid prevalence" in claim 28, section (d3) and (f3), claim 32 from (d3) and (f3), and claim 34 section (d3) and (f3), because it is not clear if the score matrix based on amino acid prevalence is intended to be the score matrix based on amino acid prevalence previously recited in claim 28, section (c3), or in claim 32 from (c3), or in claim 34, section (c3).

The claims are indefinite for recitation of the phrase "a matrix based on amino acid position-dependent intermolecular energy parameter" in claim 28, section (g3), claim 32 from (g3), and claim 34, section (g3), because it is not clear if the matrix based on amino acid position-dependent intermolecular energy parameter is intended to be the matrix based on amino acid position-dependent intermolecular energy parameter previously recited in claim 28, section (f3), or in claim 32 from (f3), or in claim 34, section (f3).

The claims are indefinite for recitation of "target protein" in claim 28, section (i3), claim 30, sections II and III, claim 32, line 34, claim 34, section (i3), claim 35, line 3 and section (a2), claim 40, sections (II) and (III), claim 41, sections (a1) and (a2), and claim 46, line 34 because it is not clear if the target protein is intended to be the target protein previously recited in the preamble of claim 28 for the recitations in claims 28, 30, 41 or the target protein in the preamble of claim 32 for the recitations in claims 32 and 46, or the target protein in the preamble of claim 34 for the recitations in claims 34, 35, and 40.

The claims are indefinite for recitation of the phrases “said amino acid sequence” and “said intermolecular energy parameter” in claim 28, section (j3), claim 32, lines 36-37, and claim 34, section (j3) because a plurality of sequences and parameters are determined in claim 28, sections (a3) and (b3) for the recitation in claim 28, in parts (a3) and (b3) of claim 32 for the recitation in claim 32, and in parts (b3) of claim 34 for the recitation in claim 34 which makes it unclear which of the plurality of sequences and parameters the phrases refer to.

The claims are indefinite for recitation of the phrase “extracting a specified number of amino acid sequences” in claim 28, section (k3), claim 32, lines 38-39, claim 34, section (k3), claim 35, section (f1), claim 41, section (f1), claim 44, lines 2-4, and claim 46, lines 29-31 because the phrase suggests that more than one sequence can be extracted and only one sequence is stored in claim 28, section (j3) for the recitation in claim 28, in claim 32, lines 36-37 for the recitation in claims 32 and 46, in claim 34, section (j3) for the recitation in claim 34, in claim 35, section (e1) for the recitation in claim 35, and in claim 41, section (e1) for the recitation in claims 41 and 44.

The claims are indefinite for recitation of the phrase “an extracted amino acid sequence” in claim 32, lines 34-35 because it is not clear if the extracted amino acid sequence is intended to be the extracted amino acid sequence from (h3) of the claim.

The claims are indefinite for recitation of the phrase “target amino acid sequence” in claim 35, section (c1) and claim 41, section (c1) because it is not clear if the target amino acid sequence is intended to be the target amino acid sequence of the preamble of claim 35 for the recitation in claim 35 and in claim 41, section (a1) for the recitation in claim 41.

The claims are indefinite for recitation of the phrase “a candidate for complementary amino acid sequence” in sections (d1) and (e1) of claims 35 and 41 because it is not clear if the candidate for complementary amino acid sequence is intended to be the candidate for complementary amino acid sequence of section (c1) of claims 35 and 41.

Claims 38 and 44 recite the limitation “candidates for complementary amino acid sequence extracted as physiologically active peptides” in lines 2-3 There is insufficient antecedent basis for this limitation in the claim.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John S. Brusca whose telephone number is 571 272-0714. The examiner can normally be reached on M-F 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marjorie A. Moran can be reached on 571-272-0720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John S. Brusca/
Primary Examiner, Art Unit 1631

jsb